

AMENDMENTS TO THE DRAWINGS

Attached hereto are three (3) sheets of corrected drawings that comply with the provisions of 37 C.F.R. § 1.84. The corrected drawings incorporate the following drawing changes:

In Fig. 5, the label "Prior Art" has been added;

In Fig. 6, reference numerals 73 and 74 have been added; and

In Figs. 8 and 9, the figure numbers have been switched.

It is respectfully requested that the corrected drawings be approved and made a part of the record of the above-identified application.

REMARKS

Claims 1-6 are currently being prosecuted.

The Examiner is respectfully requested to reconsider his rejections in view of the amendments and remarks as set forth below.

Objection to the Drawings

The Examiner objected to the drawings as not showing every feature of the present invention. In particular, the Examiner states that the tilt angle of the mirror must be shown or the feature cancelled within the claims. By way of proposed amendment, this feature has been cancelled from the claim, rendering this objection moot.

The Examiner objected to the drawings as including reference numeral 32, which is not described in the specification. Applicants disagree with the Examiner and point out that this reference numeral is used at originally filed page 6, line 22, page 7, line 4, page 7, line 9, and page 7, line 15. Accordingly, this objection is believed to be incorrect.

The Examiner objected to the drawings as not including reference numeral 73 and 74. By way of the present amendment, these reference numerals have been added to Fig. 6.

The Examiner objected to Fig. 5, and required that the legend "Prior Art" be added. This has now been accomplished in the present amendment.

The Examiner objected to Figs. 8 and 9 as having the wrong figure numbers. By way of the present amendment, this has been corrected.

Objections to the Specification

The Examiner has objected to the specification as not included a meaning for the abbreviation “MEMS.” By way of the present amendment, page 1 has been amended to include the full definition of this term.

Furthermore, Applicants have changed the word “mirror” to --reflector-- throughout the specification. Since a reflector is a distributed Bragg reflector (BBR), it is felt that this is the more appropriate term.

Objection to the Claims

The Examiner objected to claim 3 as having insufficient antecedent basis for “the concave lens surface of the mirror” in lines 5 and 6. By way of the present amendment, this limitation has been cancelled.

The Examiner objected to claim 6 as having insufficient antecedent basis for the limitation of “the lens surface” in line 2. By way of the present amendment, this limitation has been cancelled.

The Examiner also objected to the phrase “the lens surface” in line 2 of each of claims 7 and 8. This objection has been rendered moot by the cancellation of these claims.

Rejection under 35 USC 102

Claims 1 and 7 stand rejected under 35 USC 102(b) as being anticipated by TEHRANI, U.S. Patent 5,430,574. This rejection is respectfully traversed.

The Examiner states that TEHRANI teaches a first collimator, a second collimator, and a mirror interposed between the two collimators. A high reflectivity lens is also provided whereby a resonance cavity is defined between the mirror and the second collimator. Applicants submit that claim 1 as presently amended is not anticipated by TEHRANI. By way of the present amendment, Applicants have described in greater detail that the reflector is a MEMS-based reflector having a base, an aperture and a multi-layered film formed on the base and extending over the aperture serving as a curved lens. In the TEHRANI reference, there is no teaching of such a reflector. Accordingly, Applicants submit that claim 1, as amended, overcomes the rejection in view of TEHRANI.

Rejections under 35 USC 103

Claims 6 and 8 stand rejected under 35 USC 103 as being unpatentable over TEHRANI in view of HUANG, U.S. Patent 6,263,128. This rejection is respectfully traversed.

Claim 2 stands rejected under 35 USC 103 as being unpatentable over TEHRANI in view of DOMASH, U.S. Publication 2003/0072009 and VAIL et al., "GaAs micromachined widely tunable Fabry-Perot filters." This rejection is respectfully traversed.

Claims 3 and 5 stand rejected under 35 USC 103 as being unpatentable over TEHRANI in view of ATIA, U.S. Patent 6,721,098. This rejection is respectfully traversed.

Claim 4 stands rejected under 35 USC 103 as being unpatentable over TEHRANI in view of ATIA, and further in view of VAIL et al. This rejection is respectfully traversed.

The Examiner cites the secondary references to show a number of features. Thus, HUANG teaches a Fabry-Perot etalon filter. Domash teaches a tunable thin-film Fabry-Perot

filter where a central wavelength tunability is provided for by a heat conducting film resistor. Atia is cited as a Fabry-Perot filter based on micro-optical electro-mechanical technology. Vail et al. is cited to show a Fabry-Perot filter having multi-layer films composed from multiple pairs of alternating layers. Applicants submit that even when combined with the TEHRANI reference, none of these references or any combination thereof teaches the present claimed invention. The other references teach single MEMS-based reflectors. Although the use of MEMS-based reflectors are known in the art, as is described in the Background of the Invention, the conventional tunable filter must use a pair of Bragg reflectors and involves a complex chip-bonding process. In the present application, only one MEMS based reflector is required. This architecture can reduce the cost of fabrication and simplify the assembly process. This configuration of a single MEMS-based reflector allows the resonance frequency to be easily determined by simply adjusting this distance between the second collimator and the curved lens. None of these features is suggested by any of these references or their combination. Accordingly, Applicants submit that the claims are not obvious over these references.

Conclusion

In view of the above remarks, it is believed that the claims clearly distinguish over the patents relied by the Examiner, either alone or in combination. In view of this, reconsideration of the rejections and allowance of all the claims are respectfully requested.

In the event that any outstanding matters remain in this application, the Examiner is invited to contact the undersigned at (703) 205-8000 in the Washington, D.C. area.

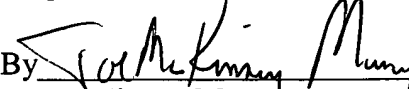
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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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Attachments